Katrina(Yuqiao) **Hu**

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Education

Carnegie Mellon University   *Pittsburgh, PA*

B.S. in Computer Science | Dean's List 2020-2023   *May 2024*

- Parallel Programming, Monte Carlo Algorithms, Applied Machine Learning, Probability for Computer Scientists, Distributed Systems(**TA**), Computer Systems, Cloud Computing, Data Structures and Algorithms, Algorithm Design and Analysis, Category Theory, Functional Programming

Experience

Rubrik, Inc   *Palo Alto, CA*

Software Engineer Intern   *Jun 2023 - Aug 2023*

- Architected and executed end-to-end Cross-Origin Resource Sharing (CORS) security mechanism on Rubrik Security Cloud.
- Migrated snapshots from file system to datastore, implemented unit tests (100% coverage) and realized full CI/CD deployment cycle with Jenkins.

Sustainible LLC   *Pittsburgh, PA*

Backend Developer Intern   *May 2022 - Aug 2022*

- Applied async/await paradigm alongside Promises to interface with Firebase collections, ensuring attainment of eventual data consistency.
- Performed Object-Oriented Design for instantiation of UI components, facilitating customization of assessment models for varied businesses.

Morningstone Technology Co., Ltd.   *Beijing, China*

Machine Learning Engineer Intern   *Jun 2021 - Sep 2021*

- Preprocessed 10-year steel dataset, including data normalization, distribution and correlation analysis, and feature engineering.
- Engineered prediction model based on LSTM and Random Forest for futures market, yielding a commendable average accuracy of 65%.
- Built machine learning pipeline on company's web application using Django, enhancing decision-making capabilities for stakeholders.

Jin Ding Hua Nuo Technology Co., Ltd.   *Beijing, China*

Foreign Exchange Trader Intern   *Jan 2021 - Mar 2021*

- Monitored and managed live trades in the foreign exchange market using MetaTrader 4 with various technical indicators.
- Collaborated with senior traders to devise and implement arbitrage, trend following, and breakout trading strategies.
- Executed strategic stop-loss orders and navigated market volatility, making a $2,400 profit within a compact 3-day trading window.

Project

Poker Solver   *Pittsburgh, PA*

Co-Developer   *Oct 2023 - Present*

- Implementing a parallel poker solver using Counterfactual Regret Minimization (CFR) algorithm.

Parallel Programming Projects   *Pittsburgh, PA*

Developer   *Aug 2023 - Present*

- Utilized CUDA to implement SAXPY function and computed complex matrix multiplications, achieving order-of-magnitude speedup.
- Used OpenMP to parallelize Quad-Tree simulation for tracking dynamic particle movements, reaching average 7.5x speedup for 250000 particles.

UChicago Trading Competition   *Chicago, IL*

Team Leader   *Feb 2022 - Apr 2022*

- Led a team of 4 to make markets on lumber futures market, employing quantitative analysis and statistical modeling to assess fair value.
- Optimized trading volume dynamically in response to market conditions, enhancing profitability and bolstering market liquidity.
- Implemented Black-Scholes model with Monte Carlo simulations to trade options on 10 simulations of an underlying.
- Developed portfolio allocation algorithm based on Risk Parity Allocation and Black-Litterman, ranking Top 15 among 50+ teams.

SkillS

Programming Python, Java, C, C++, Go, Scala, SQL, Typescript, Javascript, HTML, CSS, C#, Standard ML

Tools Numpy, scikit-learn, PyTorch, Django, AWS, Azure, GCP, Docker, Kubernetes, MySQL, Neo4j, MongoDB, Jenkins, Jira, Confluence, Angular